

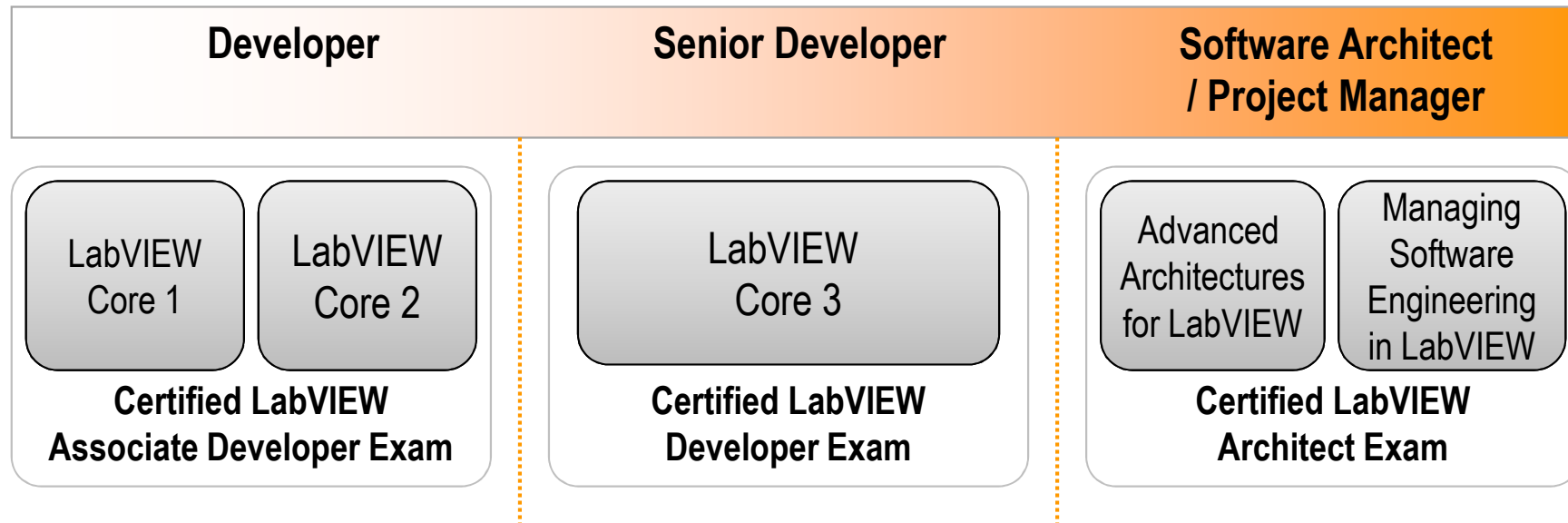
CLAD and CLD Certification Tips & Tricks

<Presenter>

<Title>



NI Certifications Align with Training



"Certification is an absolute must for anyone serious about calling himself a LabVIEW expert... At our organization, we require that every LabVIEW developer be on a professional path to become a Certified LabVIEW Architect."

- President, JKI Software, Inc.



What Does It Mean to be Certified?

- Certified LabVIEW Associate Developer (**CLAD**)
 - Familiarity with the LabVIEW environment
 - Basic understanding of coding and documentation best practices
 - Ability to interpret existing code
- Certified LabVIEW Developer (**CLD**)
 - Ability to design and develop functional programs while minimizing development time and ensuring maintainability
- Certified LabVIEW Architect (**CLA**)
 - Ability to develop a framework for an application to be executed by a team of developers given high-level requirements



What benefits Certification brings?

Engineers - Reasons to get Certified

- Accelerate Career Development
- Earn More Money and Get More Job Satisfaction
- Stand Out from the Crowd
- Network



What benefits Certification brings?

Managers - Reasons to Certify Your Employees

- Greater Competitive Advantage
- Adoption of Uniform Practices
- Lower Support Costs
- Improved Staff Retention
- Team and Community Development



Special Events for Certified Users

CLA Summit

- US Austin (March 6th-8th) for CLA users only
- UK, Newbury (Europe's first CLA Summit 2012, March 27th-28th) for CLD and CLA users.

Advanced User Group Meeting

- Invite Only (CLD/CLA level users)



CLAD Tips & Tricks

The typical experience level of a CLAD is approximately 6 to 9 months in the use of the LabVIEW Full Development System.

Exam Duration: 1 hour (1 min 30s per question)

Number of Questions: 40

Style of Questions: Multiple-choice

Passing grade: 70% (28/40)

Things that could help you to pass:

Training Classes: **Core I** and **Core II**

Preparation Kit (free): <http://sine.ni.com/tacs/app/certprep>



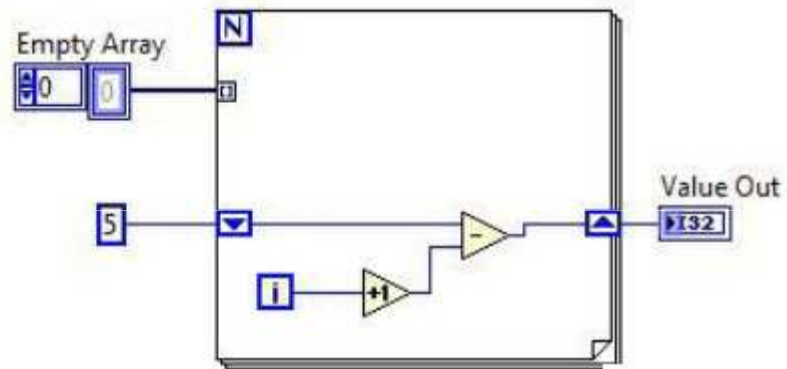
CLAD Tips & Tricks

Lets go through some Example Questions
together!



CLAD Tips & Tricks

What value does the **Value Out** indicator display after the VI executes?

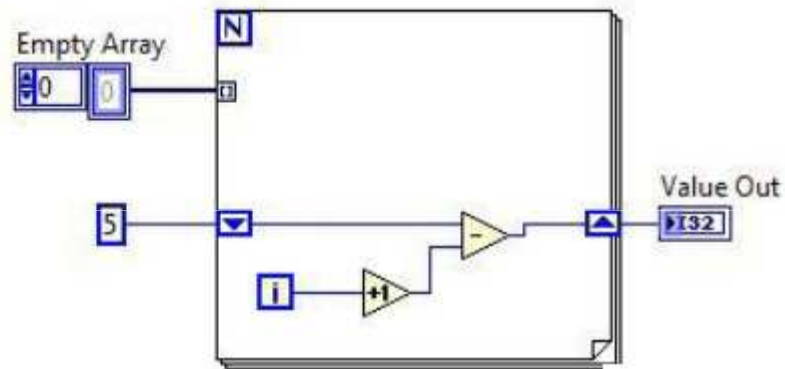


- a. 0
- b. 4
- c. 5
- d. 6



CLAD Tips & Tricks

What value does the **Value Out** indicator display after the VI executes?



- a. 0
- b. 4
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CLAD Tips & Tricks

The Error list shows all of the following **EXCEPT**:

- a. Items with errors
- b. Errors and warnings
- c. Details about the warnings
- d. Error Codes



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CLAD Tips & Tricks

Which data synchronization mechanism ensures that no data is lost when an application temporarily provides data faster than it is able to process it?

- a. Notifier
- b. Queue
- c. Semaphore
- d. Local Variable



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CLAD Tips & Tricks

The Wait Until Next ms Multiple function:

- a. Begins timing at program start and completes upon a multiple of the PC timer
- b. Begins timing after the code in the loop has completed and expires when the multiple of the (user) input time expires
- c. Begins timing after the code in the loop has completed and expires when the (user) input time completes
- d. Begins timing at program start and waits until the code in the loop has completed



CLAD Tips & Tricks

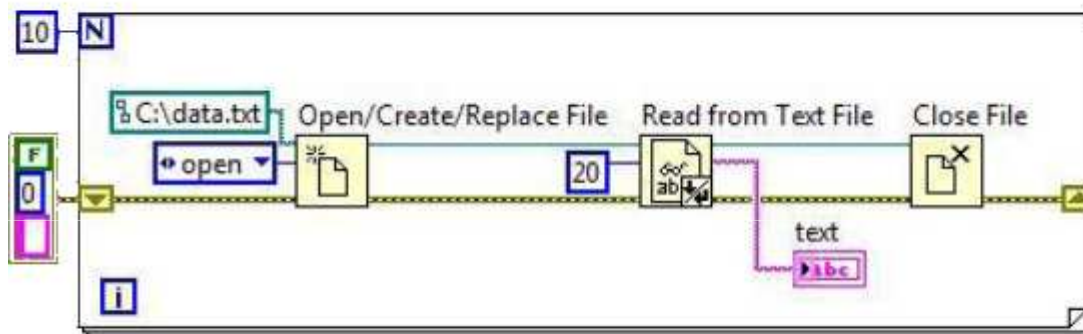
The Wait Until Next ms Multiple function:

- a. Begins timing at program start and completes upon a multiple of the PC timer
- b. Begins timing after the code in the loop has completed and expires when the multiple of the (user) input time expires
- c. Begins timing after the code in the loop has completed and expires when the (user) input time completes
- d. Begins timing at program start and waits until the code in the loop has completed



CLAD Tips & Tricks

For the VI shown in the following block diagram, automatic error handling is enabled. If the file C:\data.txt does not exist, will an error dialog box pop up?

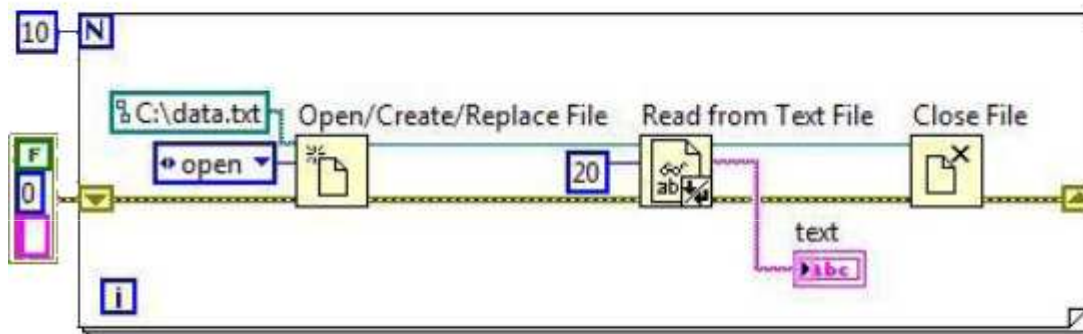


- a. Yes, each time the error from the Open/Create/Replace File function is returned
- b. Yes, each time a loop iteration completes
- c. Yes, but only once, not on each iteration of the loop
- d. No



CLAD Tips & Tricks

For the VI shown in the following block diagram, automatic error handling is enabled. If the file C:\data.txt does not exist, will an error dialog box pop up?

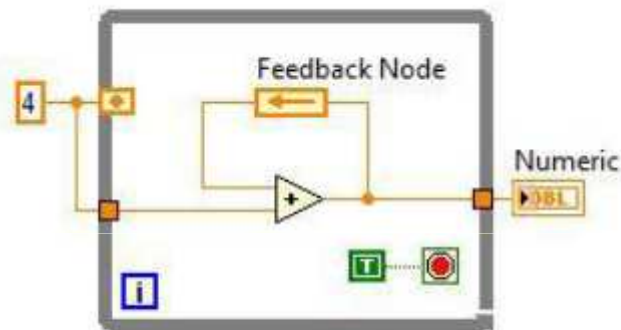


- a. Yes, each time the error from the Open/Create/Replace File function is returned
- b. Yes, each time a loop iteration completes
- c. Yes, but only once, not on each iteration of the loop
- d. No



CLAD Tips & Tricks

What value does the **Numeric** indicator display after this code executes?

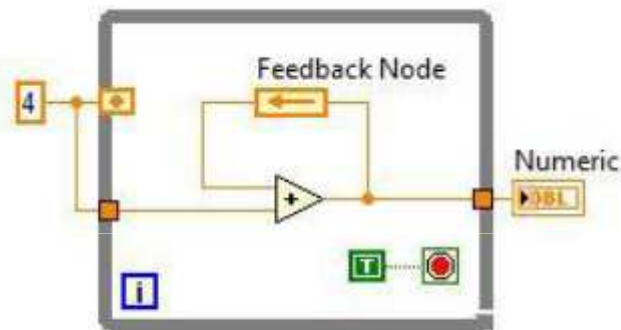


- a. 0
- b. 4
- c. 8
- d. The While Loop iterates indefinitely



CLAD Tips & Tricks

What value does the **Numeric** indicator display after this code executes?

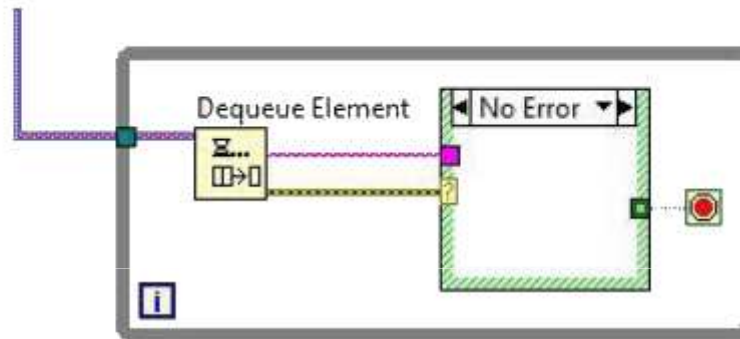


- a. 0
- b. 4
- c. 8
- d. The While Loop iterates indefinitely



CLAD Tips & Tricks

How long does this Dequeue Element function wait to receive data?

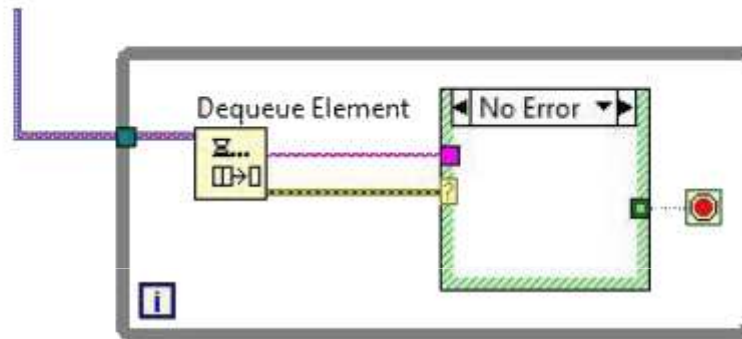


- a. 1 millisecond (default since unwired)
- b. 1 second (default since unwired)
- c. Indefinitely
- d. It does not wait, it returns immediately



CLAD Tips & Tricks

How long does this Dequeue Element function wait to receive data?



- a. 1 millisecond (default since unwired)
- b. 1 second (default since unwired)
- c. Indefinitely
- d. It does not wait, it returns immediately



CLD Tips & Tricks

A CLD is a professional with an approximate cumulative experience of 12 to 18 months developing medium to large applications in LabVIEW.

Exam Duration: 4 hours

Style of exam: Practical – application development

Passing grade: 75%

The CLD exam consists of a total of 40 points, allocated as follows:

Programming style: 15 points

Functionality: 15 points

Documentation: 10 points

Passing Score: (75%) 30 points



CLD Tips & Tricks

Things that could help you to pass:

Training Classes: **Core I, Core II and Core III**

Preparation Kit (free): <http://sine.ni.com/tacs/app/certprep>

Tips for the Exam:

- Try to first think which state machine would be the best for your task. Queued State machine seems to work well for all kind of tasks.
- Keep good coding style and you will gain lots of points
- If you are not really fast programmer don't even try to do every requirement in the CLD exam. Instead keep good coding style and try to do as much requirements as you can within 4 hours.
- Try to make code runnable (even though you have not done every requirement).
- Documentation is part of good style so try to document every VI, every Case structure, every control and indicator (in the Main VI) and create icons for main VI and subVIs.
- Try to avoid local/global variables and don't use too many property nodes
- Everyone has favourite functions/structures (File, Timing, Queues, etc) - Practice how to create those fast!

Usually people fail because they try to do every requirement and they don't have enough time.

Be patient and keep good coding style and you will pass!



CLD Tips & Tricks

CLD Sample Exam - ATM Machine

“General Operation:

The ATM controller simulates the control system of an Automated Teller Machine. The user interacts with controls and indicators on the front panel to perform common ATM functions such as deposit funds, withdraw funds, and inquire about the balance of funds from the user account.”

